

Kansas Drug Utilization Review Board Members

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Kansas Medical Assistance Program

Drug Utilization Review Bulletin

June 2005

Over Utilization of Short-Acting Beta Agonists and Under Utilization of Inhaled Corticosteroids among Asthma Patients

NAEPP Guideline

Asthma is a common disease characterized by inflammation of the airways and reversible obstruction to airflow. The annual economic burden of asthma is estimated to be 18 billion dollars based on the 2002 Morbidity and Mortality Weekly Report of CDC. While the disease has significant impact on the health care system and patients' quality of life, there are also effective interventions to improve its treatment outcome and decrease the need for acute care. The National Asthma Education and Prevention Project (NAEPP) has established the guidelines to emphasize the importance of proper pharmacological interventions¹ (see Table 1). One of the key points in the guideline is the adequate utilization of inhaled corticosteroids. It is clear in current studies that inhaled corticosteroids in adequate amounts prevent asthma symptoms and improve overall lung function. The guideline also suggests minimizing regular use of short-acting inhaled beta agonists. For example, using a short-acting beta agonist every day, or approximately one canister a month even if not used every day, indicates inadequate control of asthma and the need to initiate or intensify long-term control therapy.

Current Practice Pattern

Although present guidelines represent standards of care to achieve optimal outcomes, in reality, these guidelines are not always followed. Based on the analysis by Piecoro for Kentucky Medicaid, less than 10% of the patients who received daily inhaled short-acting beta agonists

were regular users of inhaled corticosteroids. The absence of inhaled corticosteroid therapy was associated with an increased risk of hospitalization due to asthma². In the Maryland Medicaid program, approximately one third of the children with asthma were not being treated in accordance with current treatment guidelines³. Among elderly Tennessee Medicaid recipients with moderate to severe asthma, only 25% received inhaled corticosteroids⁴. Even in the Nurses' Health study, only 32% to 57% of the retired nurses adhered to the asthma guideline⁵. Non-adherence to the guideline is a common practice pattern among asthma care providers and patients, especially the tendency of over utilization of short-acting beta agonists and under utilization of inhaled corticosteroids.

Problems and Solutions with Over Utilization Of Short-Acting Beta Agonists and Under Utilization Of Inhaled Corticosteroids

There are several reasons causing these practice patterns. Some health care providers may hesitate to prescribe inhaled corticosteroids because of concerns about the safety of inhaled corticosteroids especially in young children or the elderly. Many health care providers may be confident with prescribing inhaled corticosteroids but never detect the pattern of over utilization of short-acting beta agonists in some patients who need medication modification because of multiple prescribers or poly-pharmacy. On the patient's side, many patients have developed a belief that inhaled corticosteroids are not needed during asymptomatic periods, because they can feel the benefit of short-acting beta agonists but not inhaled corticosteroids. In addition, many patients simply do not have the appropriate technique to use different types of inhalation devices, which results in insufficient delivery of medication.

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Many studies have been conducted to address the safety concern of inhaled corticosteroids. Current literature supports that inhaled corticosteroids do not have the clinically important adverse effects on bone mineral density, cortisol production and glucose metabolism caused by equivalently effective doses of oral glucocorticoids like prednisone. They are relatively safe within recommended doses.

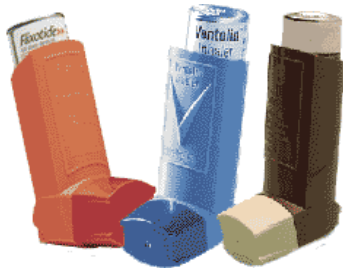


Table 1: Stepwise Approach for Long-Term Asthma Pharmacotherapy ¹	
Severity Class	Medications Required To Maintain Long-Term Control
Step 4 Severe Persistent	Preferred Treatment: High dose inhaled corticosteroid AND long-acting beta ₂ -agonist AND, if needed,
	Systemic corticosteroid long-term
Step 3 Moderate Persistent	Preferred Treatment: Low-to-medium dose inhaled corticosteroid and long-acting beta ₂ -agonist OR medium dose inhaled corticosteroids (may add long-acting beta agonists for patients with recurring severe exacerbations)
	Alternative Treatment: Low-to-medium dose inhaled corticosteroid and either leukotriene modifier or theophylline
Step 2 Mild Persistent	Preferred Treatment: Low dose inhaled corticosteroid
	Alternative Treatment: Cromolyn, leukotriene modifier, nedocromil, OR sustained- release theophylline
Step 1 Mild Intermittent	No daily medication needed
	(A course of systemic corticosteroids is recommended for severe exacerbations)

- Quick Relief (for all patients)¹:
- Short-acting bronchodilator: 2–4 puffs short-acting inhaled beta agonists as needed for symptoms.
 - Intensity of treatment will depend on severity of exacerbation; up to 3 treatments at 20-minute intervals or a single nebulizer treatment as needed. Course of systemic corticosteroids may be needed.
 - Use of short-acting beta₂-agonists >2 times a week in intermittent asthma (daily, or increasing use in persistent asthma) may indicate the need to initiate (increase) long-term-control therapy.

To address patients concern with asthma medication, education is critical. It is important for patients to understand that asthma is a chronic disease, like hypertension or diabetes, which requires maintenance treatment to prevent symptom flares. Limiting therapy to only symptomatic control of acute exacerbations may worsen the disease progression.

Improper technique with inhalation devices also contributes to unsatisfactory outcomes. Many new inhalation delivery systems that appeared on the market in recent years (especially with inhaled corticosteroids) may require different techniques. Again, patient education is critical. Providing instruction of inhaler technique by health care providers is imperative to insure that patients receive an adequate amount of the medication.

For patients who receive health care from multiple physicians and pharmacies, the Drug Utilization Review program can help the prescribers to realize the pattern of over utilization of short-acting beta agonists. By analyzing pharmacy claim database, we can screen patients with high number of prescriptions for short-acting beta agonists and inform health care providers about their utilization pattern. The ultimate goal is to encourage reevaluation of the patient’s current asthma medications and establish an appropriate asthma treatment regimen.

Conclusion:

Although abundant medical evidence has demonstrated that proper pharmacological interventions improve long-term outcome of asthma, there are obstacles in implementing these interventions. However, by understanding the safety profile of pharmacological treatments, improving patient education, and proper utilization of the DUR programs, optimal outcomes in asthma management can be achieved.

References:

1. National Asthma Education and Prevention Program : Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma (Update on Selected Topics 2002) <http://www.nhlbi.nih.gov/guidelines/asthma/asthmafullrpt.pdf>. Access January 2005
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4. Hartert TV, Togias A, Mellen BG. et al. Underutilization of controller and rescuer medications among older adults with asthma requiring hospital care. *J Am Geriatr Soc* 2000;48(6):651-57.
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Kansas Medical Assistance Program Preferred Drug List
Status of Inhaled Corticosteroids

DRUGS for ASTHMA - Inhaled Corticosteroids			
Preferred Drug Covered	This includes all generic equivalents	Non-preferred Prior Authorization Required	This includes all generic equivalents
Flunisolide	AeroBid®	Flunisolide/Menthol	AeroBid M®
Beclomethasone Dipropionate	Vanceril®	Beclomethasone Dipropionate	QVAR®
Fluticasone Propionate	Flovent® Flovent HFA® Flovent Rotadisk®	Triamcinolone Acetonide	Azmacort®
		Budesonide Inhaled Powder	Pulmicort Turbuhaler®
Budesonide Inhaled Susp	Pulmicort Respules® *6 and Under ONLY	Budesonide Inhaled Susp.	Pulmicort Respules® **7 and Over ONLY